



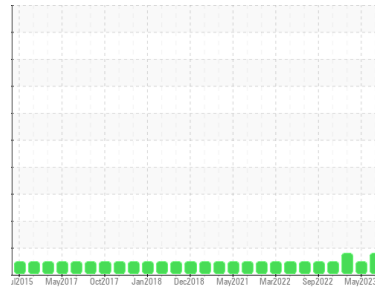
OIL ANALYSIS REPORT

Sample Rating Trend

WEAR



Machine Id
4495
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON XL SYN BLEND 15W40 (38 LTR)



DIAGNOSIS

▲ Recommendation

The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

▲ Wear

Nickel ppm levels are abnormal. Exhaust valve wear is indicated.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		GFL0091624	GFL0077617	GFL0070676
Sample Date	Client Info		14 Sep 2023	08 May 2023	13 Mar 2023
Machine Age	hrs	Client Info	30012	1138872	29069
Oil Age	hrs	Client Info	550	1138827	590
Oil Changed	Client Info		Changed	Changed	Changed
Sample Status			ABNORMAL	NORMAL	ABNORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>6.0	<1.0	<1.0	<1.0
Glycol	WC Method		NEG	NEG	0.0

WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185(m)	>100	16	10	24
Chromium	ppm	ASTM D5185(m)	>20	<1	0	<1
Nickel	ppm	ASTM D5185(m)	>2	▲ 3	2	▲ 3
Titanium	ppm	ASTM D5185(m)		1	<1	<1
Silver	ppm	ASTM D5185(m)	>2	0	0	0
Aluminum	ppm	ASTM D5185(m)	>25	5	2	4
Lead	ppm	ASTM D5185(m)	>40	3	<1	1
Copper	ppm	ASTM D5185(m)	>330	3	2	4
Tin	ppm	ASTM D5185(m)	>15	<1	<1	<1
Antimony	ppm	ASTM D5185(m)		0	<1	0
Vanadium	ppm	ASTM D5185(m)		0	0	0
Beryllium	ppm	ASTM D5185(m)		0	0	0
Cadmium	ppm	ASTM D5185(m)		0	0	0

ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185(m)	1	25	2	2
Barium	ppm	ASTM D5185(m)	1	0	0	0
Molybdenum	ppm	ASTM D5185(m)	60	22	57	57
Manganese	ppm	ASTM D5185(m)	1	<1	<1	<1
Magnesium	ppm	ASTM D5185(m)	1010	782	924	914
Calcium	ppm	ASTM D5185(m)	1070	1173	1054	1083
Phosphorus	ppm	ASTM D5185(m)	1150	802	1037	1031
Zinc	ppm	ASTM D5185(m)	1270	880	1141	1138
Sulfur	ppm	ASTM D5185(m)	2060	2502	2560	2507
Lithium	ppm	ASTM D5185(m)		<1	<1	<1

CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185(m)	>25	9	3	10
Sodium	ppm	ASTM D5185(m)		8	5	12
Potassium	ppm	ASTM D5185(m)	>20	2	<1	7

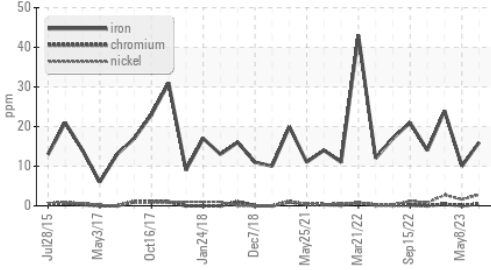
INFRA-RED

	method	limit/base	current	history1	history2	
Soot %	%	ASTM D7844*	>3	1	0.5	0.7
Nitration	Abs/cm	ASTM D7624*	>20	10.5	8.1	9.7
Sulfation	Abs/.1mm	ASTM D7415*	>30	21.0	19.0	19.7



OIL ANALYSIS REPORT

▲ Ferrous Alloys



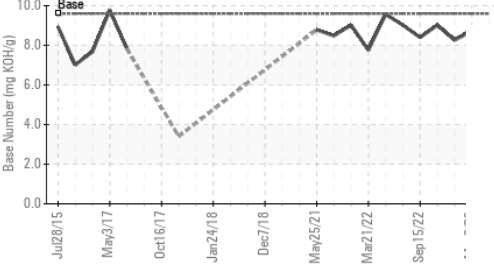
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs./1mm	ASTM D7414*	>25	16.0	14.8	15.3
Base Number (BN)	mg KOH/g	ASTM D2896*	9.6	6.95	8.72	8.26

VISUAL		method	limit/base	current	history1	history2
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG	NEG

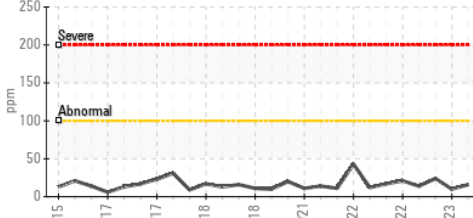
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	15.5	13.6	13.9	13.6

GRAPHS

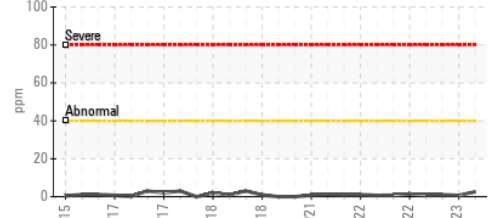
Base Number



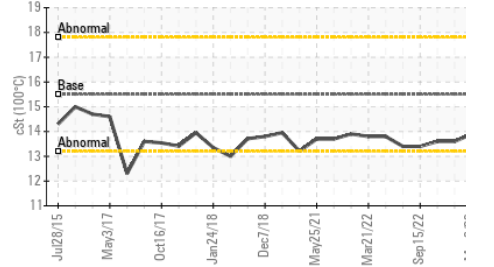
Iron (ppm)



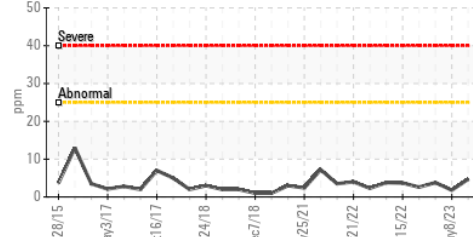
Lead (ppm)



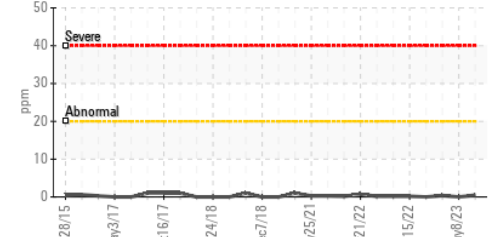
Viscosity @ 100°C



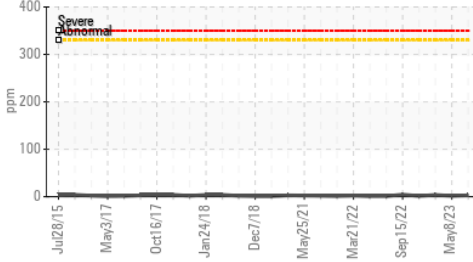
Aluminum (ppm)



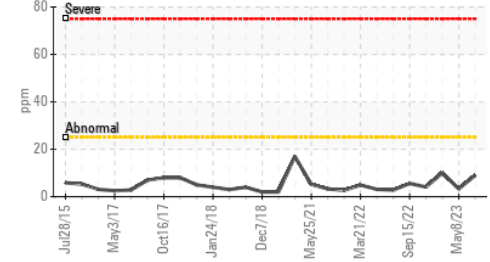
Chromium (ppm)



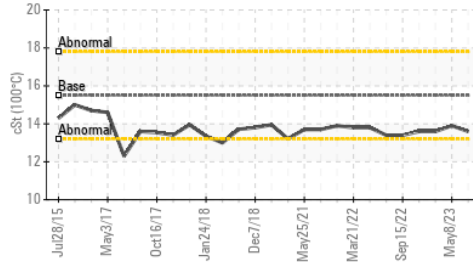
Copper (ppm)



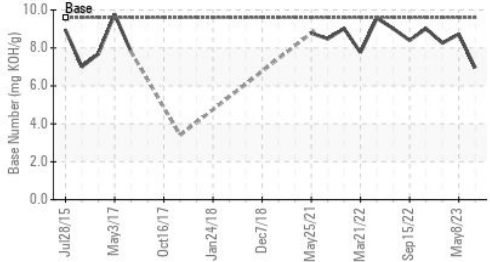
Silicon (ppm)



Viscosity @ 100°C



Base Number



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 GFL Environmental - 550 - Rocky View County
Sample No. : GFL0091624 **Received** : 19 Sep 2023 220 Carmek Blvd
Lab Number : 02583467 **Diagnosed** : 20 Sep 2023 Rocky View County, AB
Unique Number : 5644532 **Diagnostician** : Bill Quesnel CA T1X 1X1
Test Package : MOB 2

To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.

Contact: GFL Calgary
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